

National Park Service
And
Coastal Carolina University
Task Agreement

TASK AGREEMENT NO:
J55310 04 0004

COOPERATIVE AGREEMENT NO:
H5040 04 0500 Coastal Carolina University

PROJECT TITLE : “Bathymetry Study of Ft. George River for
Timucuan Ecological and Historic Preserve (TIMU)

PMIS NO: 91742

FISCAL YEAR FUNDING:
FY2004

ACCOUNT NO:
5310-NNS-4005

NOT TO EXCEED:
\$ 15,200.00

ARTICLE I - Project Abstract

The Ft. George River extends approximately three miles from the Intracoastal Waterway to the Atlantic Ocean. The river is rapidly shoaling due to the presence of large jetties at the mouth of the St. Johns River. This study will collect a series of channel bathymetric cross-sections to define the tidal prism within the Fort George River system. In addition a series of bottom sediment samples are required to characterize the river bottom deposits within the system.

ARTICLE II - SIGNATURES

NATIONAL PARK SERVICE

COASTAL CAROLINA UNIVERSITY

Kathleen Batke
Contracting Officer
Southeast Region

date

Name
Title

Date

ARTICLE II. – Statement of Work

Complete a detailed bathymetric grid, to include the desired cross-sections that will allow for a more appropriate gridding and GIS analysis of the information. To better characterize the nature of the benthic habitats in the system, complete a side scan sonar mosaic of the river bottom. Surficial sediment samples will be collected to help ground truth the sonar image. In addition to providing a more holistic coverage of the river bottom, the distribution of bedforms (if present) and their orientations observed in the side scan/bathy imagery may provide substantial insights into flow/sediment dispersal patterns in the system.

Coastal Carolina University shall perform the following Tasks:

1. Literature Review

Conduct a literature review of projects that collected bathymetric, tidal prism, volume or other measurements of water flow concerning the Ft. George River. At a minimum, collect copies of all studies referenced in the March 1999 report by Olsen Associates entitled “Ft. George Inlet Shoreline Erosion Study” and the July 2002 “Diagnostic Modeling System Applications: Northeast Regional Sediment Management, Bypass/Backpass Sand at the Ft. George and St. Johns River Entrances by Gosselin, Kabiling and Cranston that deal with bathymetric, tidal volume or tidal prism. Provide the Preserve with a paper copy of any report reviewed and referenced.

Using all historical data available on the bathymetry, tidal volume or tidal prism, compare and contrast the current state of the Ft. George River to that previously documented.

2. Obtain National Park Service Research and Collecting Permit

Prior to the start of field work, obtain a Research Permit by completing the required information at www.nps.gov. Then select “Nature and Science”. Next select “Science and Research”. Then select “U.S. National park Service Research Permit and Reporting System”

3. Bathymetric Survey

Conduct a bathymetric survey of a minimum of 30 channel crossings using survey grade fathometer mounted in a small boat. Navigation and elevation control will be through Real Time Kinematic DGPS and soundings will be corrected for heave/pitch and roll movement of the boat using a TSS-DM-05 accelerometer. In sub aerial exposed areas or areas too shallow to navigate the small boat, a backpack based DGPS system will be used. Bathymetric Survey will be collected and processed using HYPACK hydrographic survey software. Three to five axial lines of survey will also be completed to improve gridding of the dataset will augment the survey.

4. Side Scan Sonar Survey

A side scan sonar survey of the three-mile stretch will be completed using a Klien 3000 side scanning sonar. Side scan will be run on the 3-5 axial lines of the bathymetric survey and approximately 50% overlap is expected. This data will be acquired and mosaicked using Isis sonar acquisition and processing software. Provide a minimum of 80% coverage of the river bottom and map of coherent bottom type.

5. Sediment Sampling

A minimum of thirty sediment samples will be collected and analyzed for standard textural parameters (sand/silt/clay, modes) and used to ground truth the sonar mosaic. Samples locations will be defined based on the backscatter pattern of the completed side scan mosaic.

The National Park Service will perform the following:

1. Available literature

The staff of Timucuan Preserve will provide the literature currently in the park files on the bathymetric condition of the Ft. George River. This will include the reports completed by Olsen Associates (1999- hard copy) and Taylor Engineering (2003 – electronic version). NPS staff will contact local researchers to obtain any available previous bathymetric information on the Ft. George River.

2. Boat storage and dockage

The NPS will provide parking spaces (up to three) for vehicles and/or boat trailers at Kingsley Plantation for up to 10 days. The NPS will provide dock space for boat mooring at Kingsley for the same length of time. The NPS will provide access (keys and lock combinations) so that the PI may access the grounds and docks of Kingsley Plantation after the normal business hours.

3. Orientation and Introduction Presentations

Park staff will provide an orientation to the general area and information about the history of the area to the PI and students. This orientation may be in the form of an informal lecture or on-site tour.

4. Geo-referenced points

Park staff will provide the location of known survey markers both within the NPS own-lands and at locations on Little Talbot Island.

5. Contacts with St. Johns River Water Management District

In order to determine known elevations (in NAD83 format), the NPS will provide the PI with the website address for the local water management district.

6. Shoreline Mapping

The NPS will provide the PI with previously conducted aerial photography that shows the changes in the shorelines of the Ft. George River over the previous 60 years.

Products/Deliverables from Coastal Carolina University:

1. Using any historical data available on the bathymetry, tidal volume and tidal prism, compare and contrast the current stat of the Ft. George River to that previously documented.
2. A hard copy of any referenced reports used in this project.
3. Side Scan Sonar Survey - a final mosaic image shall be provided as a registered TIFF. The mosaic image shall also be incorporated in the final GIS product (ESRI ArcGIS 8.x).

4. Bathymetric survey – a series of cross channel sections will be provide as well as a bathymetric grid in GIS coverage (ESRI ArcGIS 8.x)

GIS deliverables shall meet the data specifications as described in the NPS GIS Data Specification for Resource Mapping, Inventories and Studies (June 2002)

<http://science.nature.nps.gov/im/gis/docs/GISSpec4.doc>.

Metadata that meets the minimum content standard for digital geo-spatial metadata (FGDC metadata) shall also be provided. For questions dealing with GIS products and metadata, the PI may contact Crista Carroll in the NPS Southeast Regional Office at (404) 562-3113 x528 or Shauna Allen at Timucuan Preserve at (904) 221-7567 x26.

GIS- Visualization -the bathymetric grid will be used to generate a 3-D surface. The side scan sonar backscatter image will be draped over this grid for general visualization purposes and to illustrate any relationship between relief and sediment type. If registered aerial photography and a suitable elevation mesh for the surrounding land area is made available to CMWS this will be integrated into the final GIS and visualizations. CMWS will provide a 3-D virtual flyover in MPEG format along a path defined in concert with NPS staff.

This work shall provide all soundings and bathymetric grids, side scan sonar mosaic in ARC View coverages in non-SI (feet, cubic feet, miles, etc.)

The COTR approval is required on all deliverables prior to the final payment.

Deliverables shall consist of products as described within the SOW and shall include a three dimensional chart of the bathymetry of the Ft. George River. All products shall be provided in four paper copies and four electronic versions on compact disks.

ARTICLE III. – Key Personnel

For the National Park Service:

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Contract Officer Technical Representative (COTR)
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e-mail: Richard@coastal.edu

ARTICLE IV - BUDGET

Staff Costs

Total Sal and Fringe

PI	3 days sal and fringe	1320	\$ 4833
	Student Assistants (data processing sediment analysis, bathymetry/side scan processing/GIS compilation) 4 students @ \$8/hr x 2.5w and fringe (9.6% Sal)	3513	

CMWS Equipment

Side Scan Sonar (operation and supplies) 4 days x \$500/day	2000	4,800
BERM Bathymetry System 4 days x \$500/day	2000	
Small Boats 2 x 4 days x 100/day	800	

Vehicles-Mileage

3 x 848 miles x \$0.33/mile	840
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Per Diem

Meals 5 people 32/day x 4 days	640	1,840
Housing 3 rooms x 100/day x 4 days	1200	

Materials and Supplies

Total Direct Costs	\$12,667
Indirect Costs (20% of Direct)	\$ 2,533
Project Total	\$ 15,200

ARTICLE V - AWARD AND PAYMENT

A. General - The NPS will obligate \$15,200.00 in accordance with the negotiated Not-to- Exceed (NTE) price. Any changes to this NTE price will be accomplished through a modification of this Task Agreement.

B. Payment/Invoices

- (1) **Request for Reimbursements** – Requests for Reimbursement of Funds (SF-270), shall be submitted to the NPS Contracting Officer, as identified in the Key Official section of this Task Order. Payment will be made **no more frequently than quarterly** and shall be paid by electronic fund transfer.
- (2) The Cooperator shall be reimbursed for allowable cost incurred for work accomplished in accordance with the attached Statement of Work (SOW). Payment will be made based on cost incurred up to the total Task Agreement NTE price \$ 15,200.00.

Nothing in this Task Agreement shall be construed as binding the NPS to expend in any fiscal year any sum in excess of the total current obligation.

- (3) The effective date (award/start date) and completion date must be on each SF-270. In addition, the Cooperative Agreement Number and Task Agreement Number must be clearly marked on each SF-270.

ARTICLE VI – Term of Task Agreement

This Task Agreement shall be come effective on the date of signature of the NPS Contracting Officer and shall remain in effect until November 15, 2004, unless terminated in accordance with the Basic Agreement H5040 04 0500.

ARTICLE VII – Data Rights

1. Publications of Results of Task Agreements

No party will unilaterally publish a joint publication without consulting the other part. This restriction does not apply to popular publication of previously published technical matter. Publications pursuant to this TA may be produced independently or in collaboration with others; however, in all cases proper credit will be given to the efforts of those parties contribution to the publication. In the event no agreement is reached concerning the manner of publication or interpretation of results, either party may publish data after due notice and submission of the proposed manuscripts to the other. In such instances, the party publishing the data will give due credit to the cooperation but assume full responsibility for any statements on which there is a difference of opinion. TIMU and the Southern Appalachian Cooperative Ecosystem Studies Unit will be acknowledged in any peer reviewed publication generated from this project.

This provision will not restrict the CCU's right to publish aspects of the completed study for scholarly purposes.

2. Rights In Data

Grant the United States of America a royalty-free, non-exclusive and irrevocable license to publish, reproduce and use, and dispose of in any manner and for any purpose without limitation, and to authorize or ratify publication, reproduction, or use by others, of all copyrightable material first produced or composed under this TA issued by the Cooperator, its employees, or any individual or concern specifically employed or assigned to originate and prepare such material. The NPS will have unlimited right to all records, images, maps and notes produced in relations to this project.